920476-904958

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of	:	Mark Watson
Serial No.	:	09/973,656
Filed	:	October 9, 2001
For	:	Establishing a Communications Path via a Multi-homed Communications Network
Examiner	:	Lin, Kenny S.
Art Unit	:	2154
Customer number	:	23644

APPEAL BRIEF

Honorable Director of Patents and Trademarks
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This appeal is from the Examiner's Final Office Action mailed January 13, 2006 in which all pending claims (namely Claims 1 to 14) were rejected. A timely Notice of Appeal was filed with the required fee.

The required $500 fee pursuant to 37 C. F. R. § 41.20(b)(2) should be deducted from Deposit Account No. 12-0913.

(i) Real Party in Interest

This application is assigned to Nortel Networks Limited who is the real party in interest.

(ii) Related Appeals and Interferences

There are no related appeals or interferences.

(iii) Status of Claims

This application was filed with claims 1 to 16. In the response of October 31, 2005 claims 1 to 8, 10, 11 & 13 were retained as originally filed, claims 9, 12 & 14 were amended and claims 15 & 16 cancelled. Claims 1 to 14 are those claims being appealed, and are set forth in the Claims Appendix.

(iv) Status of Amendments

A response, without amendments, was filed March 15, 2006 to the final Office Action mailed January 13, 2006 and entered by the Examiner, as well as a further response May 4, 2006, so the claims now pending have all been considered by the Examiner and finally rejected. It is the rejection of these claims as set forth in the final Office Action mailed January 13, 2006 that is appealed.

(v) Summary of Claimed Subject Matter

In a first main aspect, the invention as presently claimed is concerned with a method of establishing a communications path between a first entity and a second entity in a communications network comprising at least two address domains, said address domains being connected by two or more address translators (figures 2 and 3). The method comprises sending a call set-up message from the first entity to a first one of the network address translators via only a first one of the address domains (page 8, lines 5 to 7, figures 2 and 3). The call set-up message contains an address of the first entity within the first address domain (page 8, lines 8 to 10). The method further comprises receiving the call set-up message at the first network address translator and retaining the address of the first entity within the first address domain in the call set-up message as well as adding information about the identity of the first address domain to the call set-up message (page 8, lines 12 to 22). The call set up message retaining the address of the first entity within the first address domain well as the added information about the identity of the first address domain is forwarded to the second entity via a second one of the address domains and a second one of the address translators such that the information in the call set-up message can be used to establish a communications path from the second entity to the first entity which excludes one or more of said address domains (page 8, lines 23 to 32, figures 2 and 3).

In a further aspect, the invention provides an address translator suitable for connection between a first and a second address domain in a communications network. The network address translator comprises an input arranged to receive a call set-up message from an entity in the first address domain, said call set-up message comprising an address of the entity within the first address domain; and a processor arranged to modify the received call set-up message by adding information about the identity of the first address domain whilst retaining the address of the entity within the first address domain; and also adding information about an

address of the network address translator itself within the second address domain to the call set-up message; said address of the network address translator itself being bound to the address of the entity in the first address domain.

In yet further aspects, the invention provides a method of operating the address translator, a communications network comprising the address translator and a computer program stored on a computer readable medium for controlling the address translator to implement the foregoing method of operating the address translator.

The invention is concerned with situations in which call signalling follows an indirect path between the originating party and the destination party via at least two address domains even though both entities may be in the same address domain. Such an indirect path can occur because of the multi-homed nature of the communications network and the need for the call signalling to be routed via entities in the other addressing domain(s), in order to access services provided by those entities (such as routing services provided by Call Servers). Previously, in this type of situation, the resulting media paths also follow an indirect path through the other addressing domain(s). The media paths may not follow the exact same path as the signalling in that the media paths will not go through the Call Servers, but they will go through the same sequence of address domains. This is wasteful of network resources, increases complexity, reduces voice quality, for example, and adds to expense.

The invention seeks to provide an improved method and apparatus for establishing a communications path between a first and second entity in a multi-homed communications network.

The arrangement of the invention in accordance with the foregoing aspects of the invention provides the advantage that a direct path between the first and second entities is obtained through their common address domain and this can be used for a

communications session such as a voice call, video call or any other suitable type of communications session despite the fact that call messaging has had to pass through at least two address domains (in order to access call servers for establishing media paths between the first and second entities). In prior art arrangements, the media paths (the path) between the first and second entities would also pass through at least two address domains despite the first and second entities being located within the same address domain.

The present invention recognises that problems arise in prior art arrangements as a result of removing the address of a user terminal (e.g. first, second entity) from a call set up message at a network address translator.

The present invention overcomes such problems by, instead of removing the address of a user terminal (first entity) from a call set up message at a network address translator, this information is retained together with an identifier indicating the identity of the user terminal's originating address domain. Consequently, when a call message is received at another user terminal (second entity) and it is recognised that an identifier for the second entity's address domain is the same as that for the first entity's originating address domain, the path between the first and second entities can be set up through only the common address domain shared by said first and second entities rather than, as in prior art arrangements, passing through the same sequence of address domains as taken by the call messaging signal.

(vi) Grounds of Rejection To Be Reviewed on Appeal

There are two rejections at issue:

1. the rejection of claims 1 to 8 under 35 U.S.C. §103(a) as being unpatentable over applicant admitted prior art (AAPA) in view of US Patent Number 6697354 to Borella et al and further in view of US Patent Number 6760429 to Hung al; and

2. the rejection of claims 9 to 14 under 35 U.S. C. §103(a) as being unpatentable over applicant admitted prior art (AAPA) in view of US Patent Number 6697354 to Borella et al and further in view of Official Notice.

(vii) Argument

Ground 1:

Referring firstly to claim 1, it has been contended during the examination procedure that AAPA (page 5, line 28 to page 7, line 7 of the application as filed) discloses all the features of the claimed invention save for **(i)** teaching to retain the address of the first entity within the first address domain in the call set up message as well as adding information about the identity of the first address domain to the call set up message and that the information in the call set up message can be used to establish a communications path from the second entity to the first entity **(ii)** which excludes one or more address domains.

However, it is alleged that feature **(i)** is taught by Borella and that it would have been obvious to combine the teachings of AAPA and Borella because Borella's teaching of adding header with source address and destination address enables AAPA to further insert data into the message and allows the receivers to identify the sender by using the addresses incorporated in the message.

It is further alleged that feature **(ii)** is taught by Hung and that it would have been obvious to combine the teachings of AAPA, Borella and Hung because Hung's teaching of establishing communications in response to receiving a request enables AAPA and Borella's system to establish communication by using the information obtained from the request and determining a proper communication path.

It will be noted that in *ex parte* examination of patent applications, the Patent and Trademark Office bears the burden of establishing a *prima facie* case of obviousness. MPEP § 2142; *In re Fritch*, 972 F.2d 1260, 1262, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992). The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention is always upon the Patent and Trademark Office.

MPEP § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 U.S.P.Q. 785, 788 (Fed. Cir. 1984). Only when a *prima facie* case of obviousness is established does the burden shift to the applicant to produce evidence of nonobviousness. MPEP § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). If the Patent and Trademark Office does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of a patent. *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Grabiak*, 769 F.2d 729, 733, 226 U.S.P.Q. 870, 873 (Fed. Cir. 1985). A *prima facie* case of obviousness is established when the teachings of the prior art itself suggest the claimed subject matter to a person of ordinary skill in the art. *In re Bell*, 991 F.2d 781, 783, 26 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1993). To establish a *prima facie* case of obviousness, three basic criteria must be met. **First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed invention and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. MPEP § 2142.

It seems to have been overlooked in the examination procedure that not only does AAPA not teach, among other things, "*retaining the address of the first entity within the first address domain in the call set up message as well as adding information about the identity of the first address domain to the call set up message*", but that it positively teaches that "*When NAT 1, 14 receives the call set-up request it creates a binding between an address x of a port on the NAT and terminal A. That is, address x, which is an address within domain D2, is arranged to forward to terminal A in*

domain D1. This is achieved as is known in the art. NAT 1 then modifies the call set up message by removing the address of user terminal A within address domain D1 and replacing that address by address x." (emphasis added) (page 7, lines 1 to 7). In other words, AAPA teaches that the network address translator having received the call set up message modifies the call set up message by removing the address of the first entity within the first address domain and by replacing it with an address in the second address domain.

Why then would one of ordinary skill in the art be motivated to apply the 'network translation' method taught by Borella to that of AAPA when the method taught by Borella is in complete contradiction to what is taught by AAPA? AAPA teaches a network address translator that removes the address of the first entity within the first address domain from the call set up message and replaces it with an address in the second address domain, whereas the section of Borella relied on in the examination procedure (column 17, lines 23 to 41) teaches adding (not retaining) a header to a data packet, the header comprising a source address set to a network device's internal address and a destination set to a router's internal address. One of ordinary skill in the art would not seriously contemplate modifying the network address translation method applied at the network address translator as taught by AAPA with the source and destination address header addition process performed by a network device such as a personal computer PC 14 as taught in Borella. To do so would go directly against the teaching of AAPA since it proposes adding to the call set up message that which AAPA teaches is to be removed.

As already discussed, Borella, column 17, lines 23 to 41 teaches adding a header to a data packet, the header comprising a source address set to a network device's internal address and a destination set to a router's internal address. This process is carried out at a network device such as a personal computer PC 14. PC 14 is not a network address translator per se. PC 14 also does not perform the source and destination address header addition process in connection with receiving a call set

up message, but creates the call set up message. It is a requirement of claim 1 that the step of retaining the address of the first entity within the first address domain in the call set up message and adding information about the identity of the first address domain is performed at the first network address translator following receipt of the call set up message. It is clear that this is not disclosed by Borella and thus the combination of AAPA and Borella does not teach all of the limitations of claim 1. In this regard, it has been alleged during the examination procedure that the claims are unclear in that it is not clearly shown that the first network translator performs the retaining and adding steps. Applicant respectfully disagrees. Claim 1 recites "*receiving the call set-up message at the first network address translator and retaining the address of the first entity within the first address domain in the call set-up message as well as adding information about the identity of the first address domain to the call set-up message*" (emphasis added). The use of the conjunction "and" makes it clear that the steps of retaining and adding are performed at the first network address translator following receipt at said translator of the call set up message.

In Borella, network translation between the first address domain (Fig. 1, SOHO LAN 12) and the second address domain (Fig. 1, other networks 30, 32) occurs at router 26. Router 26 is described as comprising part of first computer network 12 (column 5, lines 54 to 62). During the examination procedure, it has been contended that Borella discloses that the call set up message is transmitted to the second network. The second network is identified as router 26 (see Advisory Action mailed June 9th, 2006). It is quite clear that router 26 is not a "second network" but forms part of the first network (SOHO LAN) 12. Under no reasonable construction of the disclosure of Borella can the router 26 be considered as comprising a second network and certainly not the second address domain as required by the present invention.

In Borella, the outer IP header is added to the set up message at PC (first entity) 14 and stripped away from said set up message at router (network address translator)

26. As such, the outer IP header "*adding information about the identity of the first address domain to the call set up message*" never leaves the first address domain. Further, the router 26 then translates the address of the data packet to a combination address comprising a combination of the common external address (198.10.30.30) of the local network and the globally unique port assigned to PC 14, i.e. the router 26 translates the source address of the PC (first entity) 14 thus even the source address of the first entity never leaves the first address domain.

Even if one were to construe the router 26 of Borella as a second network, it is clear that the call set up message with added information about the first address domain never reaches the second entity via the second address domain as required by claim 1 of the present application, because the router 26 of Borella translates the address of the data packet to a combination address comprising a combination of the common external address (198.10.30.30) of the local network (first address domain) and the globally unique port assigned to the first entity. In other words, the call set up message received by the second entity in the arrangement of Borella does not contain any added information about the first address domain because this is stripped out of the call set up message by the router 26. Consequently, the combination of AAPA and Borella does not disclose all of the limitations of claim 1.

It follows from the foregoing that, because the call set up message received by the second entity in the arrangement of Borella does not contain any added information about the first address domain because this is stripped out of the call set up message by the router 26, Borella does not disclose the limitation that the information comprising the identity of the first address domain in the call set up message can be used to establish a communications path from the second entity to the first entity. Consequently, the combination of AAPA and Borella does not disclose all of the limitations of claim 1.

Hung also does not disclose that the call set up message received by the second entity contains added information about the first address domain nor that the information comprising the identity of the first address domain in the call set up message can be used to establish a communications path from the second entity to the first entity. Therefore, the combination of AAPA, Borella and Hung does not disclose all of the limitations of claim 1.

It has been alleged that Hung teaches an entity to receive a call set up message and use the message to establish a telephone communication with the sending entity such that the telephone communication excludes address domains. In the context of the present application, an "address domain" is a region of a communications network in which each network node has an address or identifier which is unique within that region and which is allocated on the basis of a particular method or scheme. The address domains are consistent with each other in the nature of the address format used therein such that the same address may be repeated between two different address domains but not within a single address domain (page 1, lines 17/18). Hung teaches a call center computer that gathers information from a customer computer that will be used in setting up a call to the customer. The information includes whether the call is to be an IP telephony call or a PSTN call. The addressing schemes used in IP telephony and PSTN systems are entirely inconsistent and thus do not comprise at least two address domains as required by claim 1. In any event, the teaching of Hung is not applicable to communications network of the present invention. One of ordinary skill in the art would not seriously contemplate modifying the system of AAPA combined with Borella to implement either an IP telephony call to a sending entity or a PSTN call depending on information contained in a call set up message specifying the type of call requested. Consequently, the combination of AAPA, Borella and Hung does not disclose all the limitations of claim 1 and there is nothing in the disclosures of these documents that would motivate or suggest to one of ordinary skill the means of arriving at the arrangement of the present invention.

The rejection of claims 2 to 8 is moot in view of the foregoing.

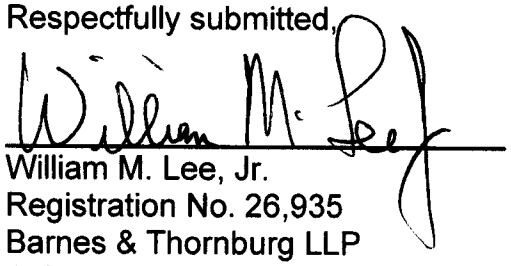
Ground 2:

The foregoing submission of Ground 1 is equally applicable to independent claims 9 and 12. The rejection of claims 10, 11, 13 and 14 is moot in view of the foregoing.

Reversal of the Examiner is therefore clearly in order and is solicited.

August 14, 2006

Respectfully submitted,



William M. Lee, Jr.
Registration No. 26,935
Barnes & Thornburg LLP
P.O. Box 2786
Chicago, Illinois 60690-2786
(312) 214-4800
(312) 759-5646 (fax)

Claims Appendix

1. A method of establishing a communications path between a first entity and a second entity in a communications network comprising at least two address domains, said address domains being connected by two or more address translators, said method comprising the steps of:-

a) sending a call set-up message from the first entity to a first one of the network address translators via only a first one of the address domains, said call set-up message containing an address of the first entity within the first address domain;

b) receiving the call set-up message at the first network address translator and retaining the address of the first entity within the first address domain in the call set-up message as well as adding information about the identity of the first address domain to the call set-up message;

c) forwarding the call set-up message to the second entity via a second one of the address domains and a second one of the address translators such that the information in the call set-up message can be used to establish a communications path from the second entity to the first entity which excludes one or more of said address domains.

2. A method as claimed in claim 1 wherein said step (ii) of receiving further comprises creating a binding between a second address domain address for a port at the first address translator and the first address domain address of the first entity; and once said binding is created adding the second address domain address of that port to the call set-up message.

3. A method as claimed in claim 1 which further comprises, after said step (ii) of receiving, forwarding the call set-up message to a third network address domain via a third network address translator.

4. A method as claimed in claim 3 which further comprises at the third network address translator, adding information about an identity of the third address domain to the call set-up message.

5. A method as claimed in claim 1 wherein said first address translator is arranged to access information from another network entity in order to carry out the method of step (ii) of claim 1 in respect of adding information about the identity of the first address domain to the call set-up message.

6. A method as claimed in claim 1 wherein said communications path is arranged to provide a service that is hosted by one or more servers within the communications network but not within the first address domain.

7. A method as claimed in claim 1 wherein said first address domain is provided in a private region of the communications network and said second address domain is provided in a public region of the communications network.

8. A method as claimed in claim 1 wherein said communications network is selected from an internet protocol communications network or an asynchronous transfer mode communications network.

9. An address translator suitable for connection between a first and a second address domain in a communications network, said network address translator comprising:-

a) an input arranged to receive a call set-up message from an entity in the first address domain, said call set-up message comprising an address of the entity within the first address domain;

b) a processor arranged to modify the received call set-up message by adding information about the identity of the first address domain whilst retaining the address of the entity within the first address domain; and also adding information about an address of the network address translator itself within the second address domain

to the call set-up message; said address of the network address translator itself being bound to the address of the entity in the first address domain.

10. An address translator as claimed in claim 9 wherein said processor is provided externally to the address translator and is connected to the address translator by a communications network.

11. An address translator as claimed in claim 9 which further comprises an output arranged to forward the call set-up message to the second address domain.

12. A method of operating an address translator which is connected between a first and a second address domain in a communications network, said method comprising the steps of:-

a) receiving a call set-up message from an entity in the first address domain, said call set-up message comprising an address of the entity within the first address domain;

b) modifying the received call set-up message by adding information about the identity of the first address domain whilst retaining the address of the entity within the first address domain in the call set-up message; and also adding information about an address of the network address translator itself within the second address domain to the call set-up message; said address of the network address translator itself being bound to the address of the entity in the first address domain.

13. A communications network comprising an address translator as claimed in claim 9.

14. A computer program stored on a computer readable medium arranged to control a network address translator in order to carry out the method of claim 12.

Evidence Appendix and Related Proceedings Appendix

There are no such appendices.